

## A NEW MICRARIONTA FROM ARIZONA.

BY H. A. PILSBRY AND J. H. FERRISS.

When at the Grand Canyon of the Colorado in the autumn of 1906 the writers met Mr. W. J. Gilchrist, who at that time was about to leave the Canyon for the mining region of the lower Colorado. Besides various friendly and helpful services in connection with our work at the Canyon, Mr. Gilchrist volunteered to look out for snails in the region he was about to visit. It was with a great deal of pleasure that one of us received a letter and package of snails, making good his offer of assistance.

In that desert country snails are not common, and for a long time none were found. Finally, Mr. Gilchrist writes, "I was building a stone monument on a mining claim just after a heavy rain and found three live snails on a rock. These and four dead ones were all I have been able to find. They came from a small range of mountains 12 miles south from Parker, Yuma Co., Arizona."

The snails prove to be of a new species, which may be described as follows.

MICRARIONTA DESERTORUM n. sp. Plate xi, figs. 6-10.

The shell is small, depressed, openly umbilicate, the width of umbilicus contained nearly 5 times in that of the shell, glossy, opaque, pinkish-white with some oblique streaks of flesh-color, and sometimes a few corneous dots; the inner  $2\frac{1}{2}$  whorls fleshy-corneous. The spire is convex but very low, whorls about  $4\frac{1}{3}$ , the inner ones rather slowly increasing, the last much wider, about double the width of the preceding. The embryonic shell consists of  $1\frac{1}{2}$  whorls, the first fourth of a whorl smooth, the rest with close, even sculpture of minute papillæ, which are lengthened in a direction parallel to the sutures, and form a regular pattern of oblique, forwardly descending and ascending rows. The post-embryonic whorls have fine, irregular, somewhat wavy striæ in the direction of growth-lines, and papillæ like those of the embryonic whorls but much more sparsely placed, and disappearing near the end of the penultimate whorl. The last whorl has weak growth-lines only. It is rounded periferally and descends slowly to the aperture. The suture is deeply impressed, especially at the last whorl. The aperture is oblique, rounded-oval.

Peristome slightly expanded, with a narrow, rusty edge; upper and outer margins very slightly expanded; basal margin more expanded; columellar margin rather broadly dilated. The ends converge and are joined by a short glossy callus.

Alt. 7.5, diam. 12.9, aperture alt. 5.8, width 6.7 mm.

Alt. 6.8, diam. 11.6 mm.

Alt. 6.7, diam. 11.1 mm.

The whole upper surface, head and tentacles, are blackish-slate color, finely irregularly granulose. There are no distinct dorsal or genital furrows. The sole is tripartite, the areas separated by indistinct longitudinal impressed lines, in drowned alcoholic examples. The middle area is twice as wide as the others, slaty-white; side areas darker slate color. The mantle is whitish, the venation of the lung outlined delicately with gray.

The genital system (pl. XI, fig. 9) resembles that of *M. hutsoni*. The penis (*p.*) is swollen near the base, and has a slender retractor muscle (*p. r.*), and a moderately long flagellum. The vagina is very short, the spermatheca globular, its duct very long, and inserted unusually low, much farther down than in *M. hutsoni*. The dart sack (*d. s.*) is large, and near its base, on the side facing the vagina, the two mucus glands (*m. gl.*) are inserted close together (as shown in fig. 10, a diagrammatic view of these organs). The mucus glands descend and their enlarged ends lie near the base of the dart sack. The measurements are: length of penis (to insertion of retractor), 3 mm.; length of epiphallus, 1.8 mm.; length of flagellum, 4 mm.; length of vagina, 1.8 mm. The jaw has about 6 unequal ribs, grouped in its median part.

This species is doubtless related to both *Sonorella baileyi* and *S. fisheri* Bartsch, both of which differ in various details of sculpture. It stands nearest to *Micrarionta hutsoni* Clapp, having the same type of embryonic sculpture; but that species has a dark band above the periphery, bordered with white above, and a much larger aperture.

Cotypes are in the collections of Ferriss and the Academy of Natural Sciences (No. 94783).

The anatomical data obtained from living examples of the species *hutsoni* and *desertorum* by the junior author, indicate that we went too far in referring species from the lower Colorado basin to the genus *Sonorella*. It now seems likely that the species *wolcottiana*, *indioensis*, *baileyi*, *fisheri*, *lohrii*, and perhaps some others, belong to

*Micrarionta*; a group which should apparently be given generic rank. Anatomically, *Sonorella* is not closely related to the *Micrarionta* series, which has its center in southern and Lower California, and the adjacent border of Arizona. Data to be presented in our forthcoming report on southwestern snails collected in 1906 and 1907 indicate that *Sonorella*, while remarkably varied in anatomy specifically, yet shows no forms in any way connecting with the Californian types of *Helices*.

EXPLANATION OF FIGURES.

Plate XI, figs. 6, 7, 8. *M. desertorum*.

Fig. 9, genitalia of the same specimen; *d. s.*, dart sack; *epi.*, epiphallus; *fl.*, flagellum; *m. gl.*, mucus glands; *p.*, penis; *sp. d.*, lower portion of the duct of the spermatheca. The mucous glands and their ducts are shaded.

Fig. 10. Diagram of dart sack and mucous glands viewed from the side towards the vagina, showing the contiguous insertions of the mucous ducts.

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SOME NEW CALIFORNIAN SHELLS.

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BY WILLIAM HEALEY DALL.

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RISSEO (ALVANIA) GRIPPIANA Dall, n. sp.

Shell small, brownish, solid, cancellate, with one and a half smooth nuclear and five and a half sculptured whorls, nucleus flattish, blunt, remaining whorls rotund, evenly enlarging; last whorl with 13-14 axial ribs crossed by somewhat more slender, equal, equidistant, spiral threads not tuberculate at the intersections, with three somewhat stouter spirals on the base; earlier whorls with two and then three spiral threads between the sutures; suture indistinct, aperture obovate, rounded in front, slightly angular behind, with a much thickened lip which in senile specimens is duplex at the margin. There is a very minute chink but no umbilicus. Length 3, max. diam. 1.5 mm.

Type specimens from Todos Santos Bay, Lower California, between tides, Hemphill, U. S. Nat. Mus. 46171; others from 12 fathoms sand, off the entrance to San Diego harbor, C. W. Gripp;